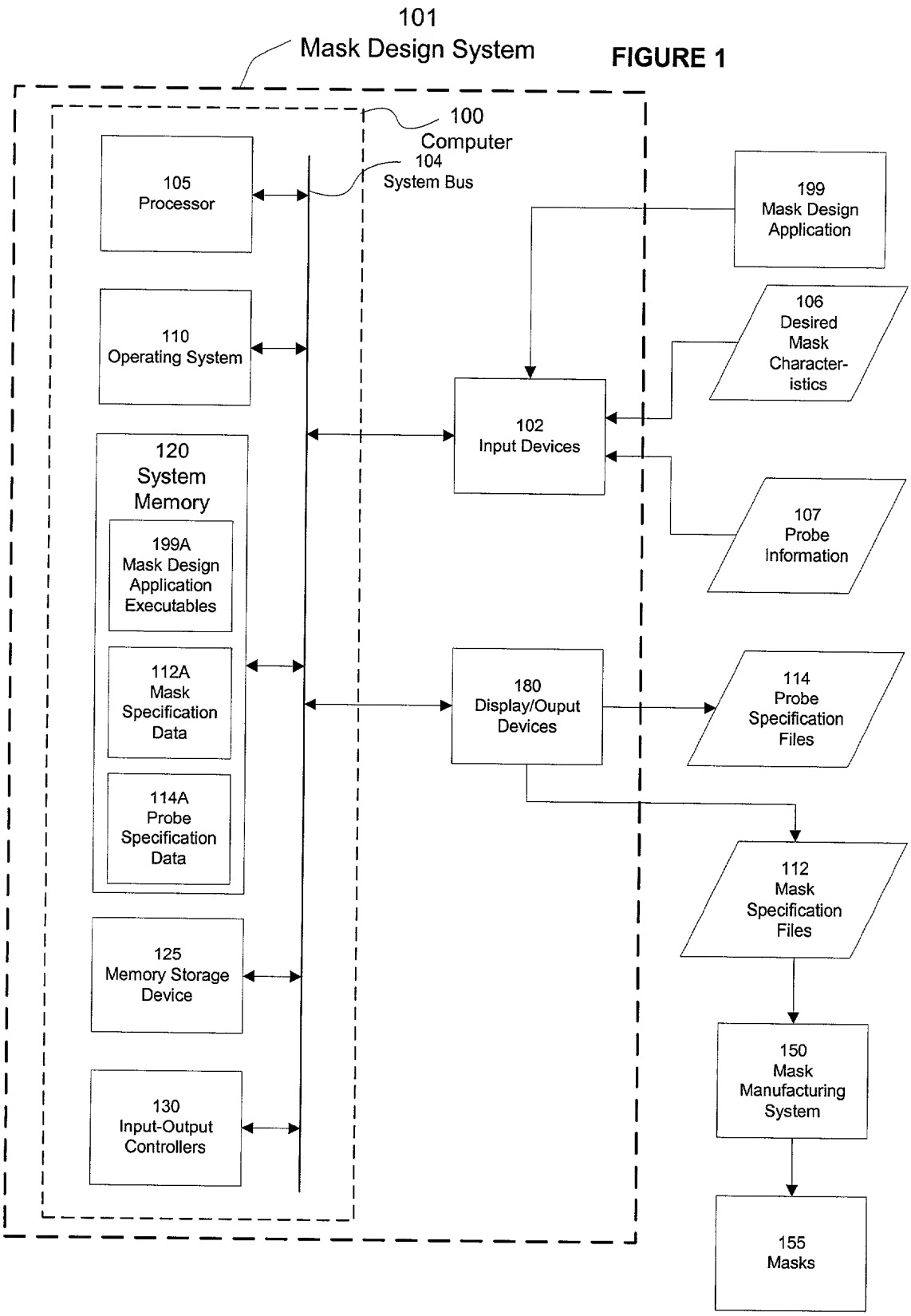

101
Mask Design System
100
Computer
104
System Bus
105
Processor
110
Operating System
120
System
Memory
199A
Mask Design
Application
Executables
112A
Mask
Specification
Data
114A
Probe
Specification
Data
125
Memory Storage
Device
130
Input-Output
Controllers
199
Mask Design
Application
106
Desired
Mask
Character-
istics
102
Input Devices
107
Probe
Information
180
Display/Ouput
Devices
114
Probe
Specification
Files
112
Mask
Specification
Files
150
Mask
Manufacturing
System
155
Masks

FIGURE 1

FIGURE 2A

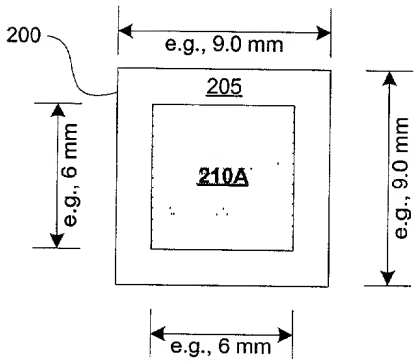


FIGURE 2B
(PRIOR ART)

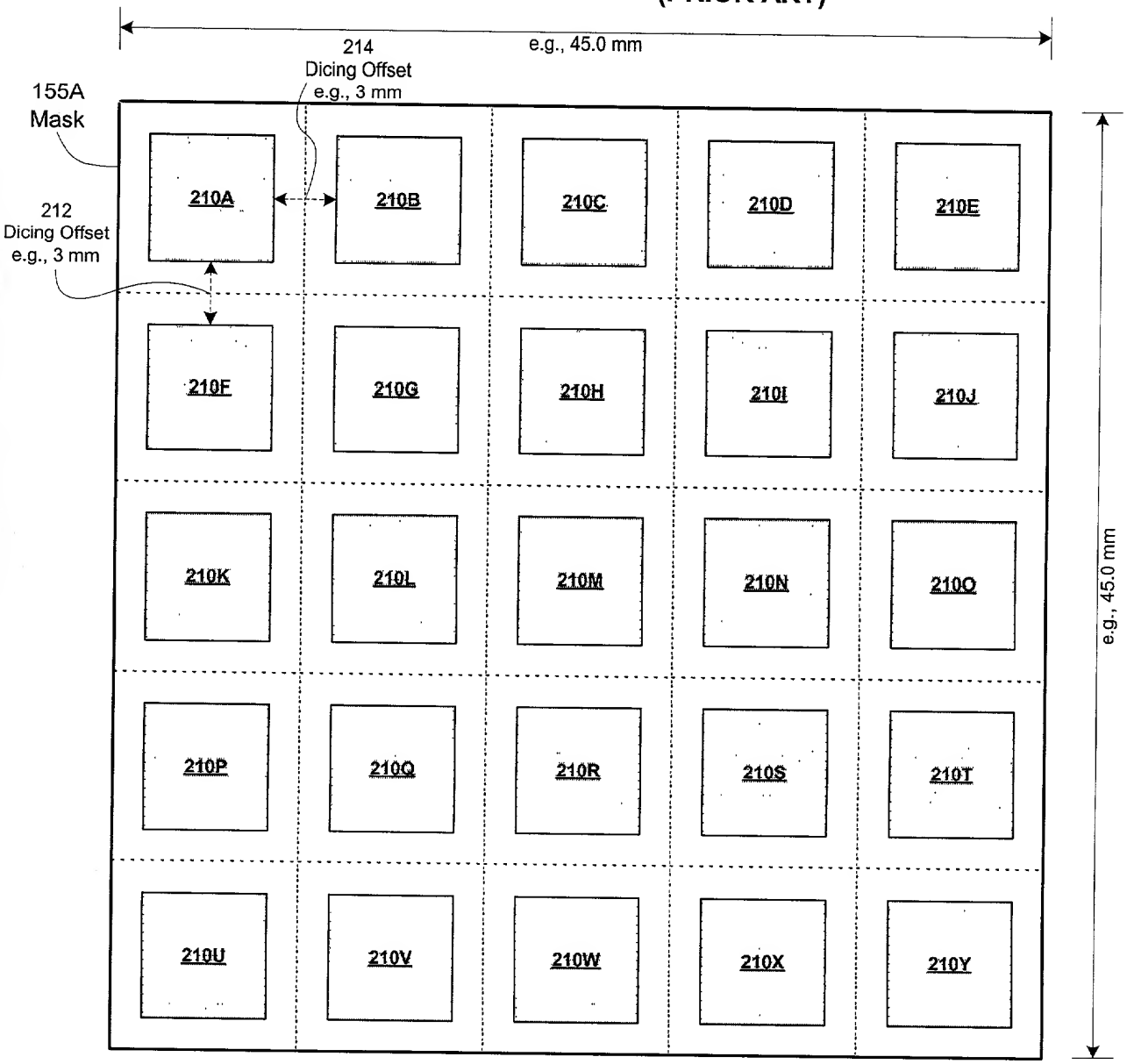


FIGURE 2C

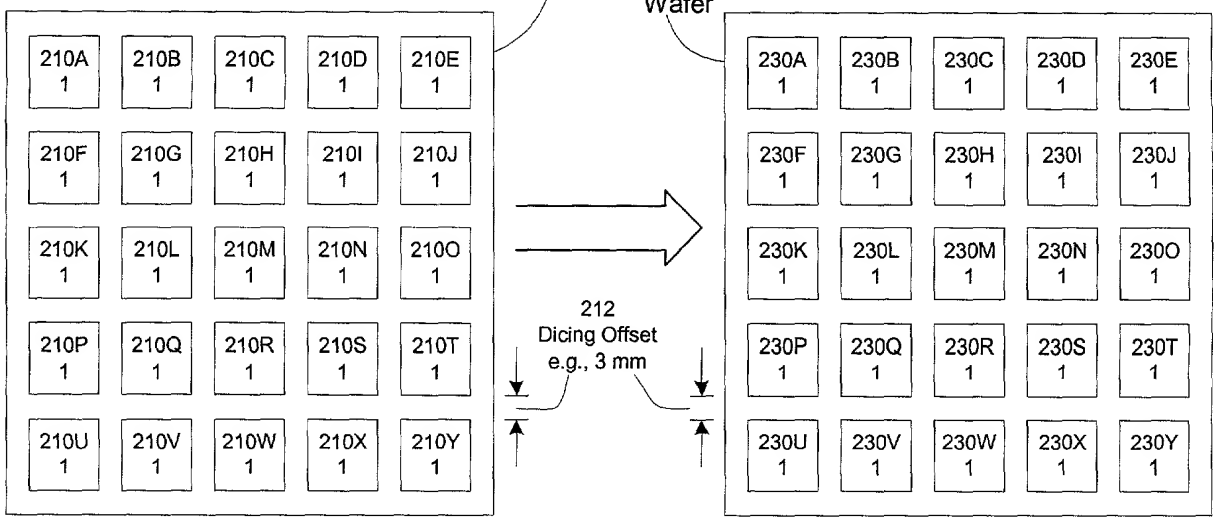


FIGURE 2D

FIGURE 2G

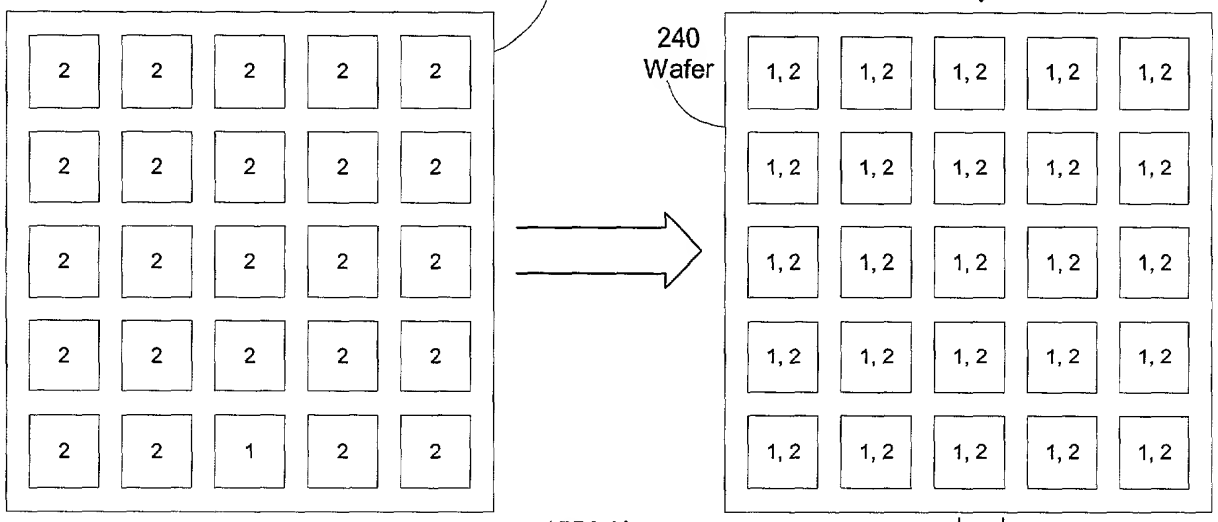


FIGURE 2H

FIGURE 2E

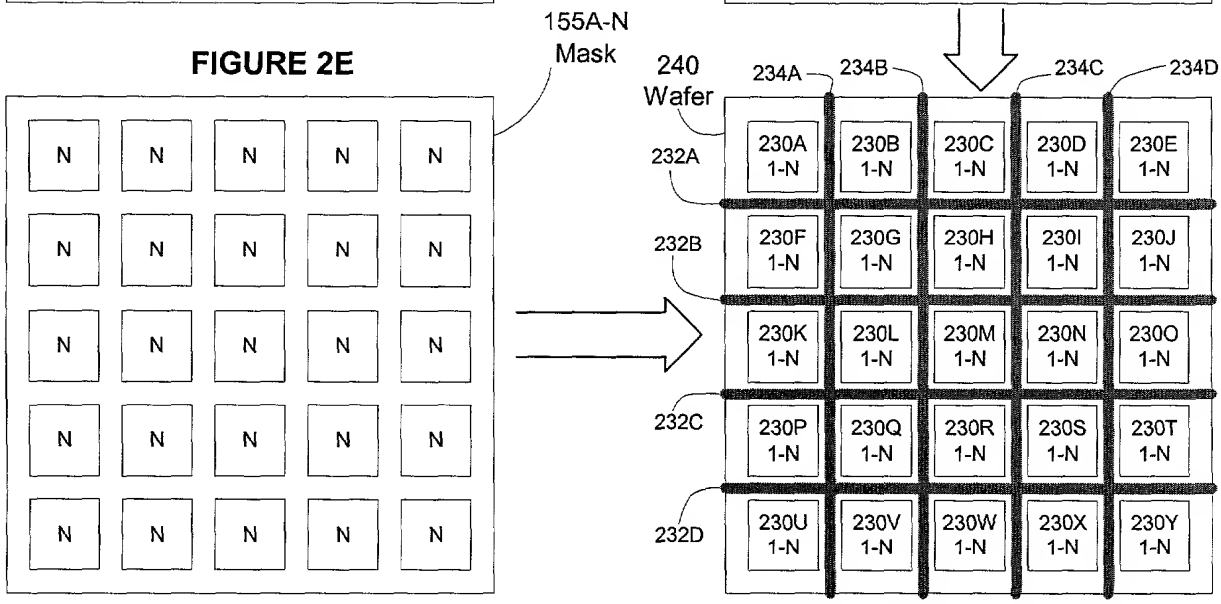
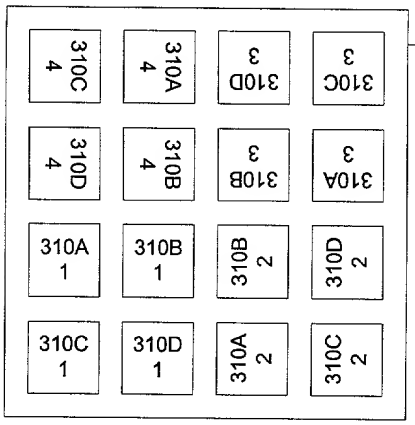


FIGURE 2F (PRIOR ART)

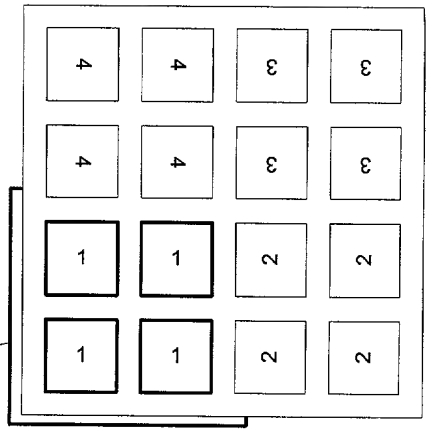
FIGURE 3A



155B Mask

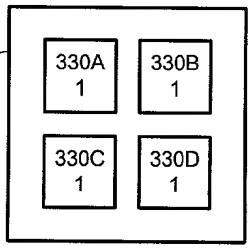
340 Wafer

FIGURE 3B



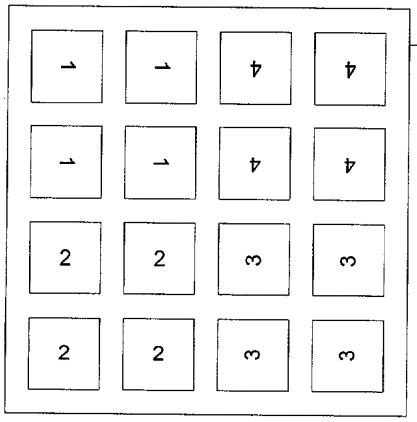
340 Wafer

FIGURE 3C



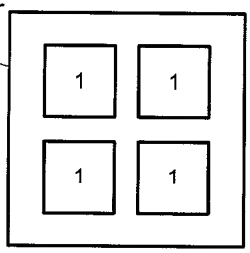
340 Wafer

FIGURE 3C



155B Mask

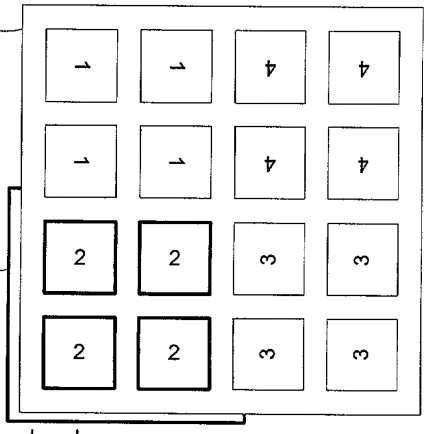
340 Wafer



312 Dicing Offset e.g., 3 mm

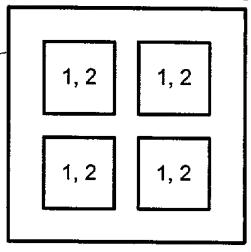
155B Mask

FIGURE 3D



340 Wafer

FIGURE 3E



340 Wafer

332

334

FIGURE 3F

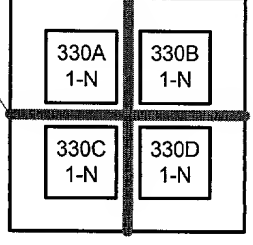


FIGURE 4A

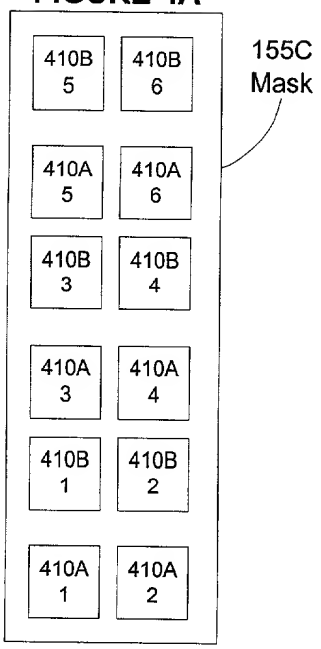


FIGURE 4B

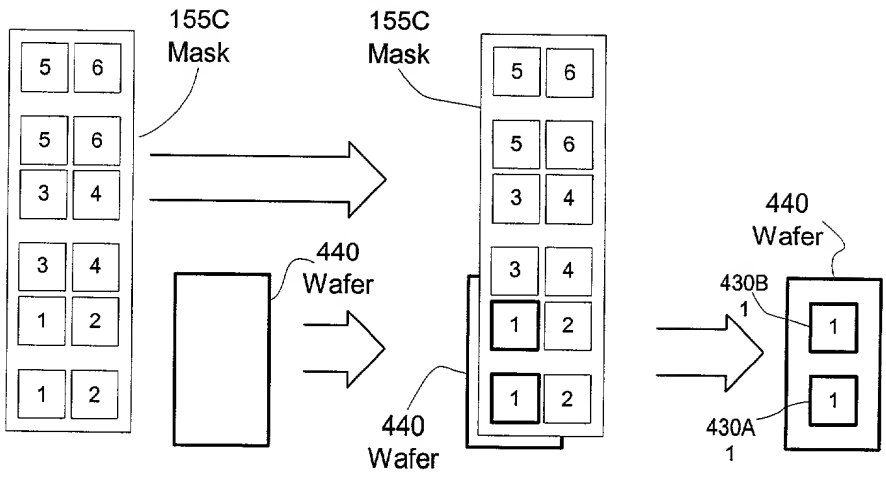


FIGURE 4C

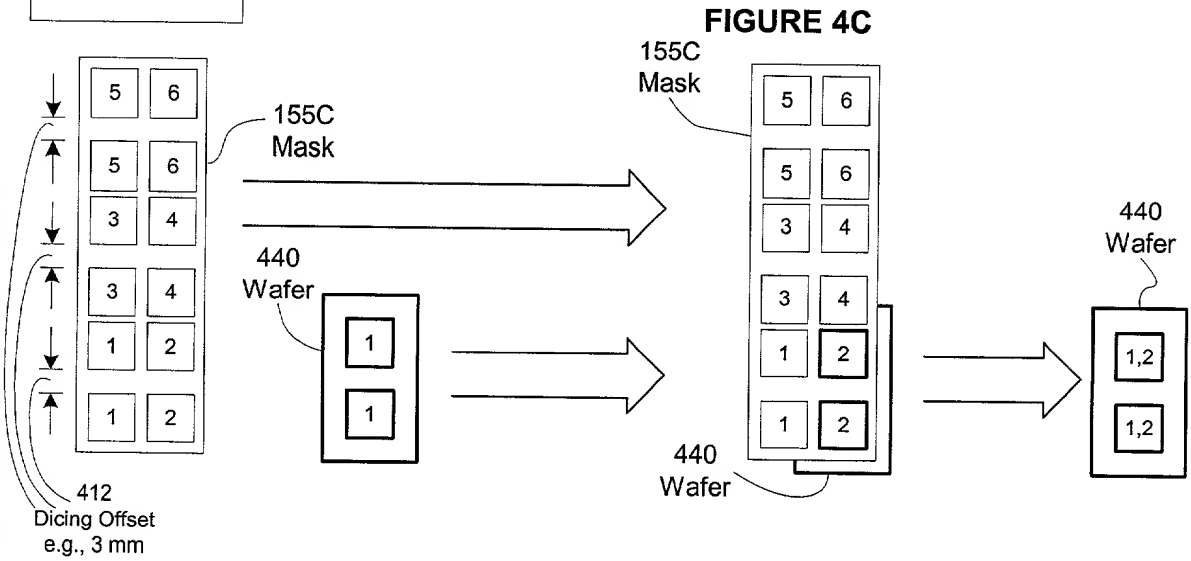


FIGURE 4D

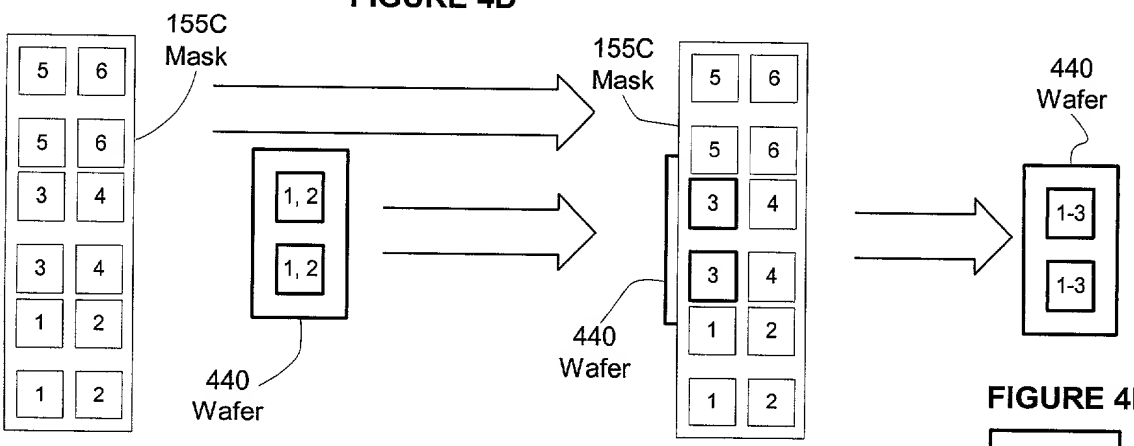


FIGURE 4E

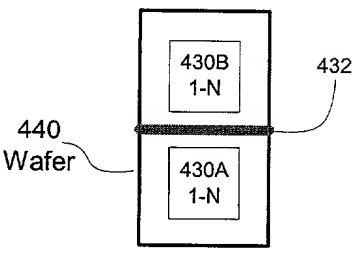


FIGURE 5A

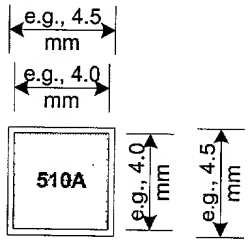


FIGURE 5B

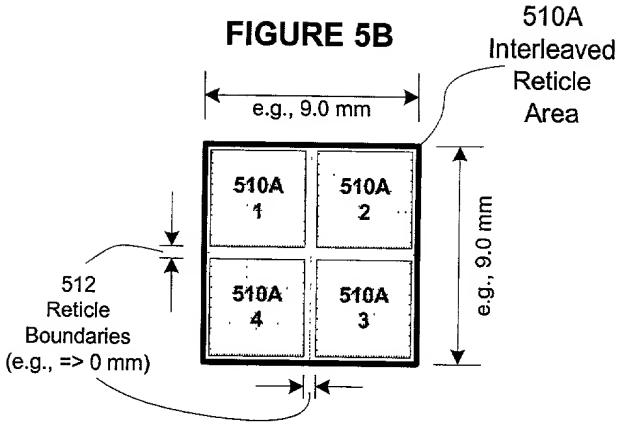


FIGURE 5C

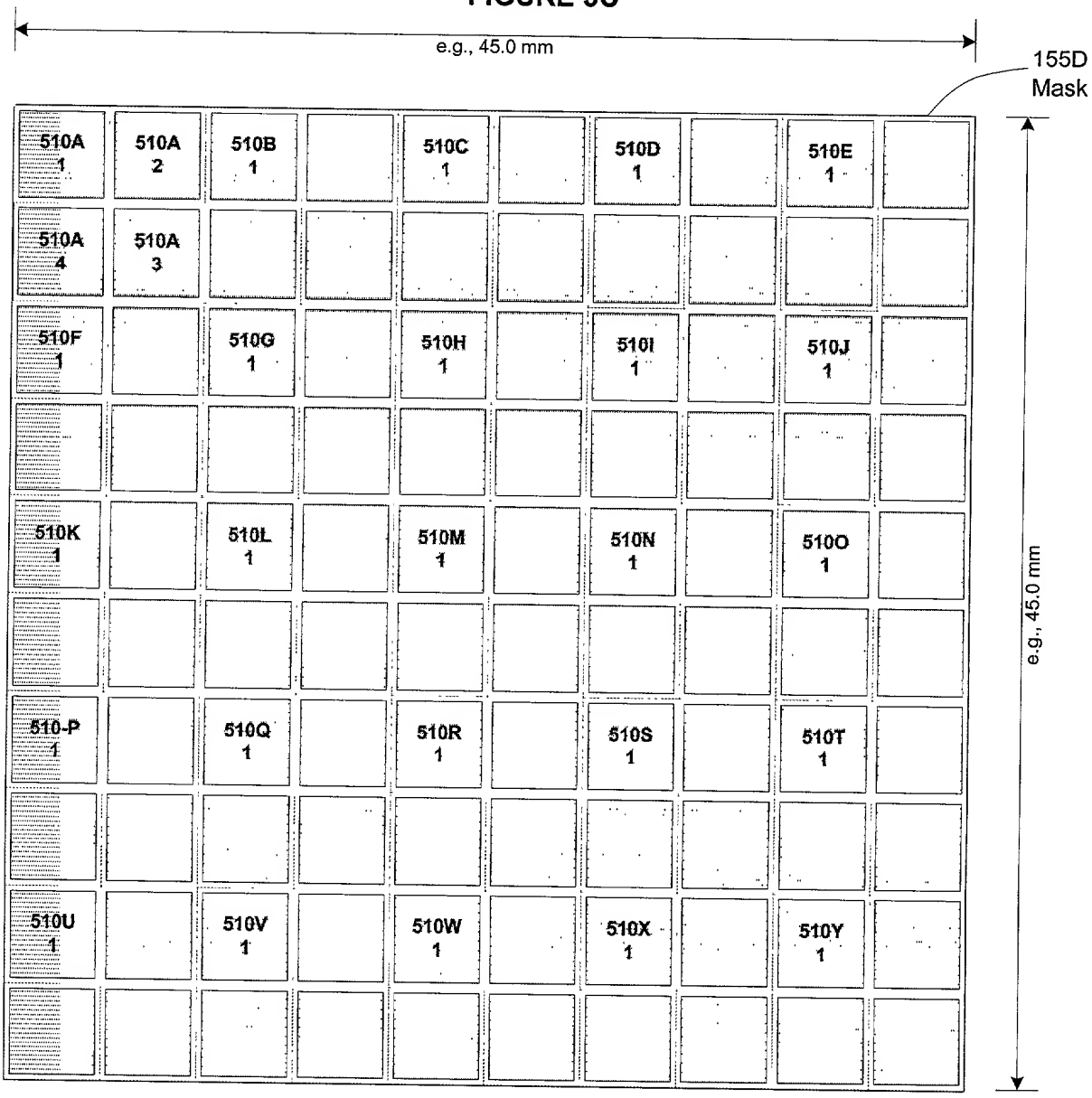


FIGURE 6A

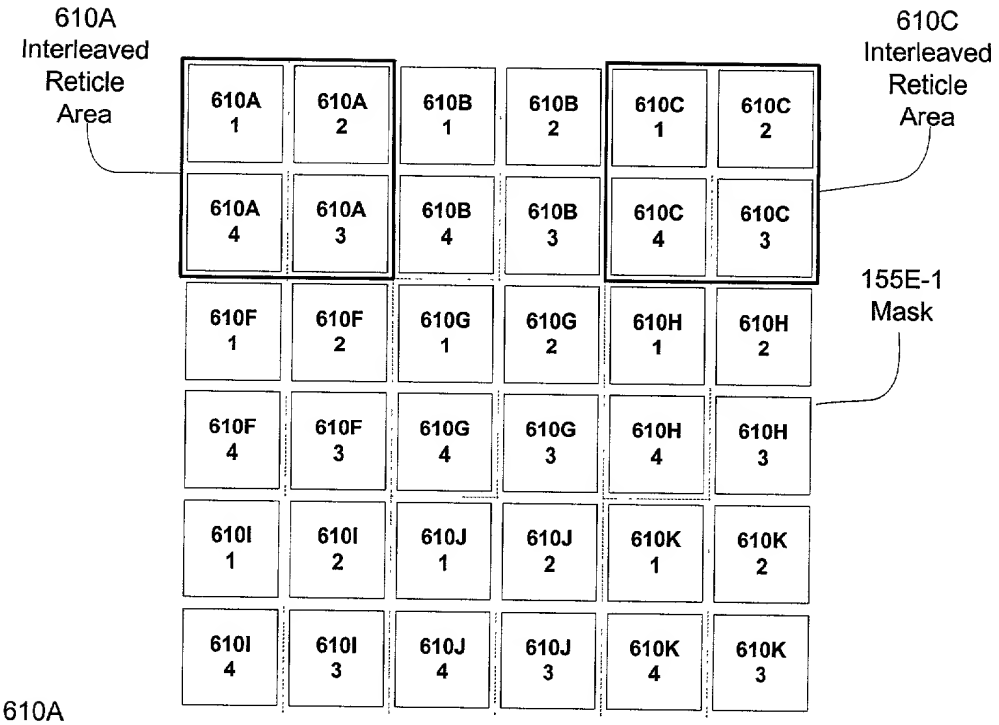


FIGURE 6B

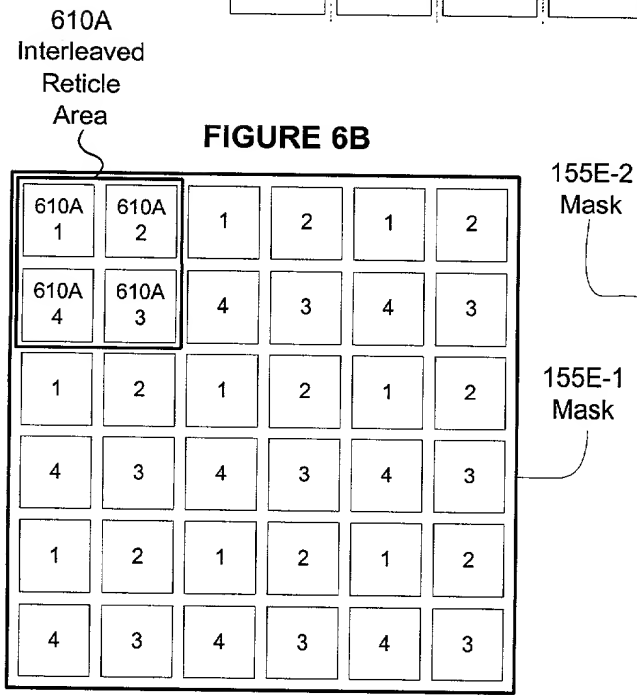


FIGURE 6C

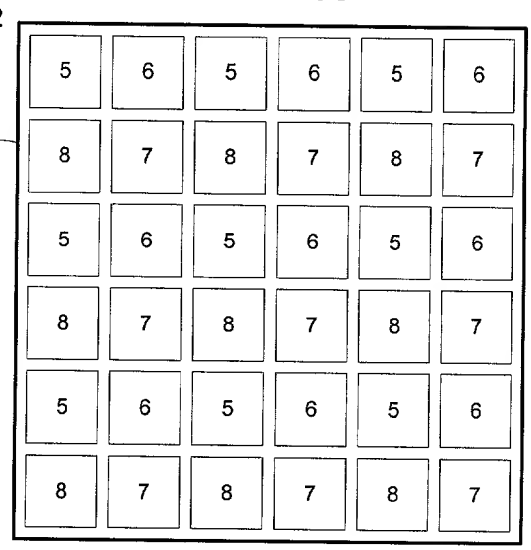


FIGURE 6D - STEP 1

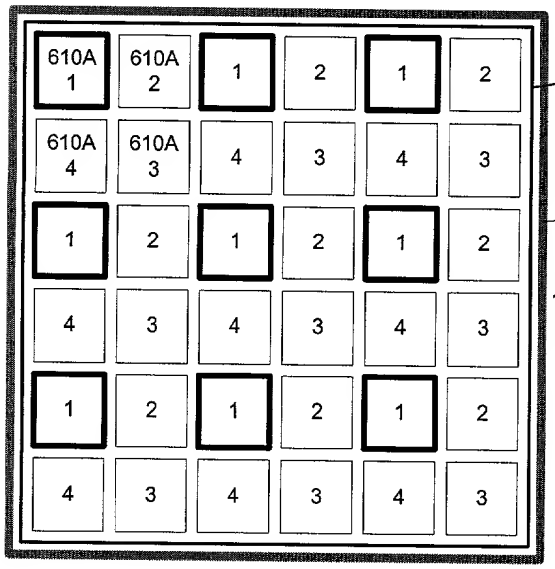


FIGURE 6E - STEP 2

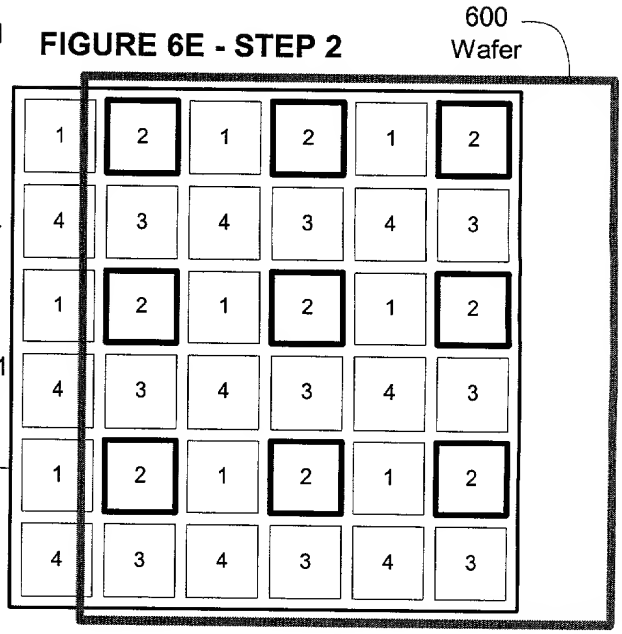


FIGURE 6F - STEP 3

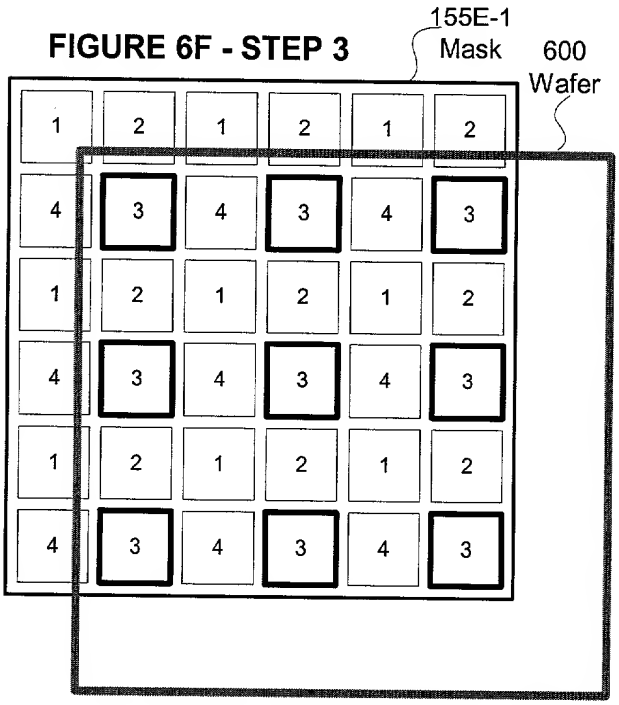
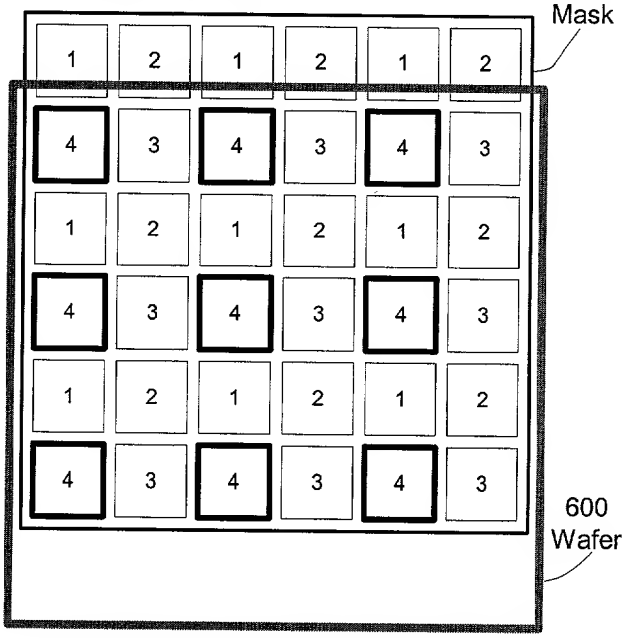


FIGURE 6G - STEP 4



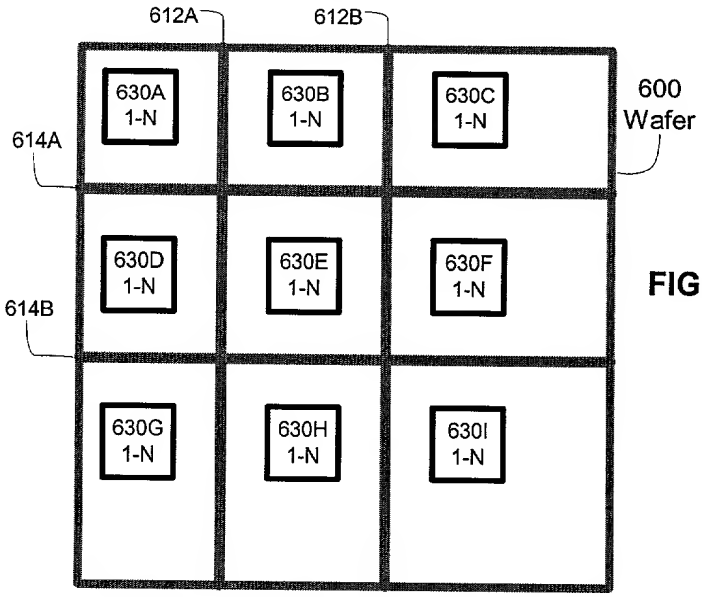


FIGURE 6H

FIGURE 6I

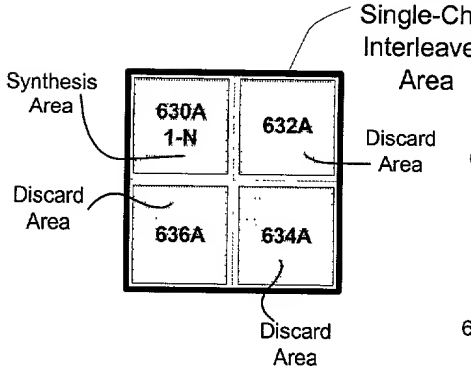


FIGURE 6J

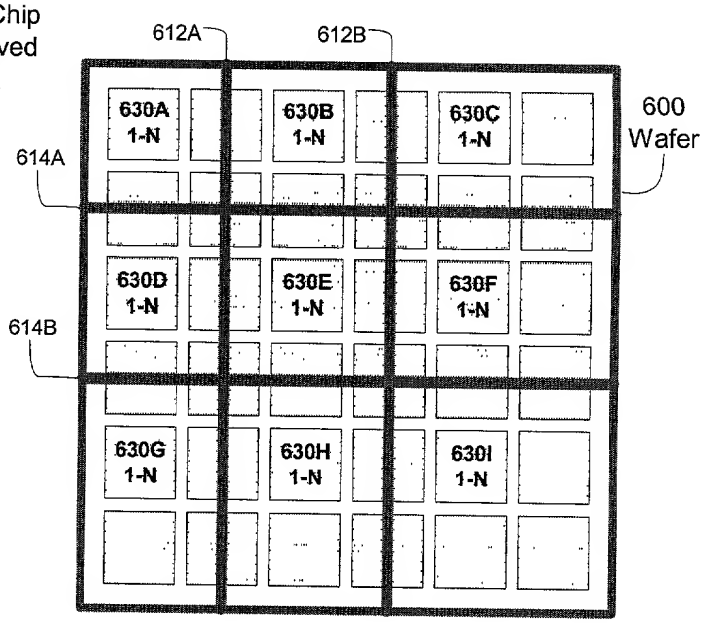


FIGURE 6K

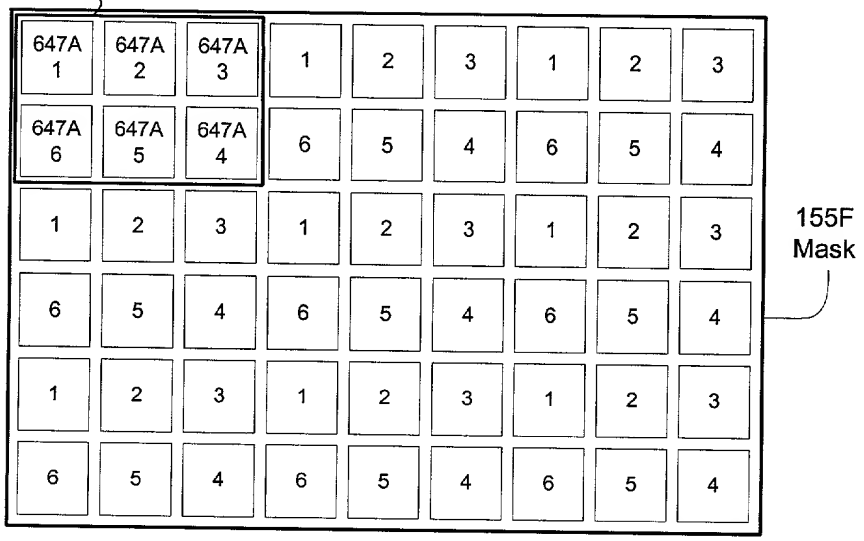


FIGURE 6L

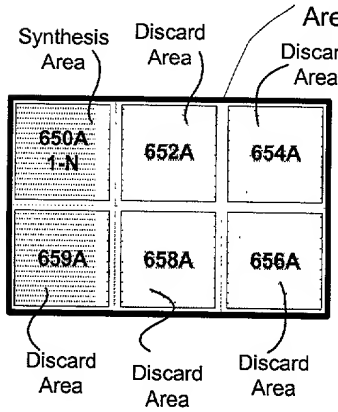


FIGURE 6M

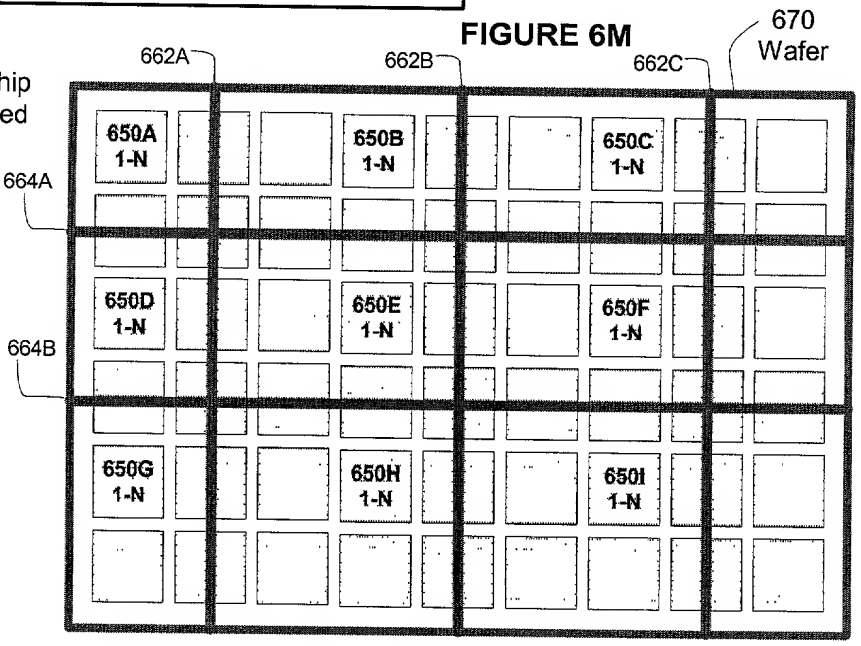


FIGURE 7

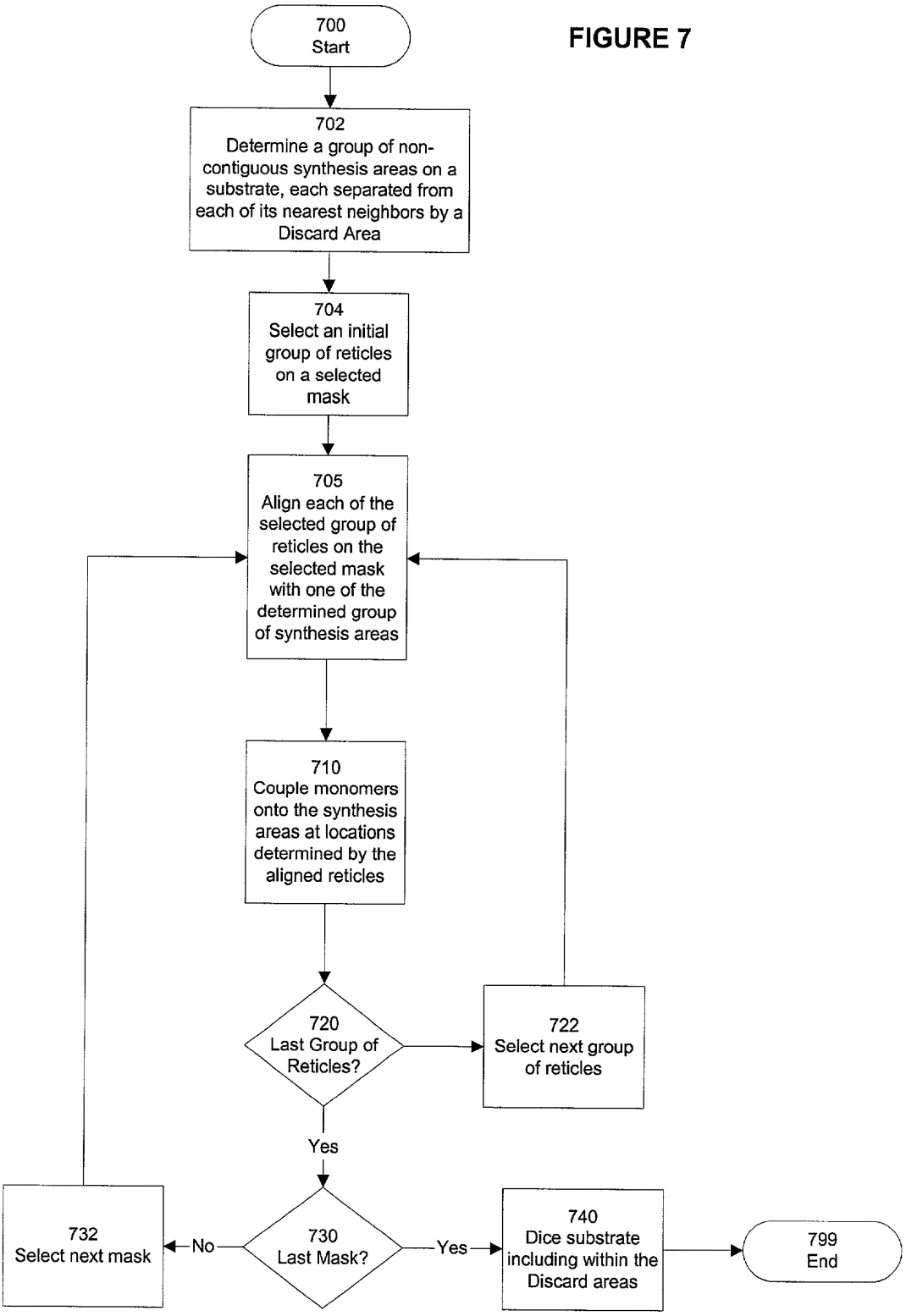
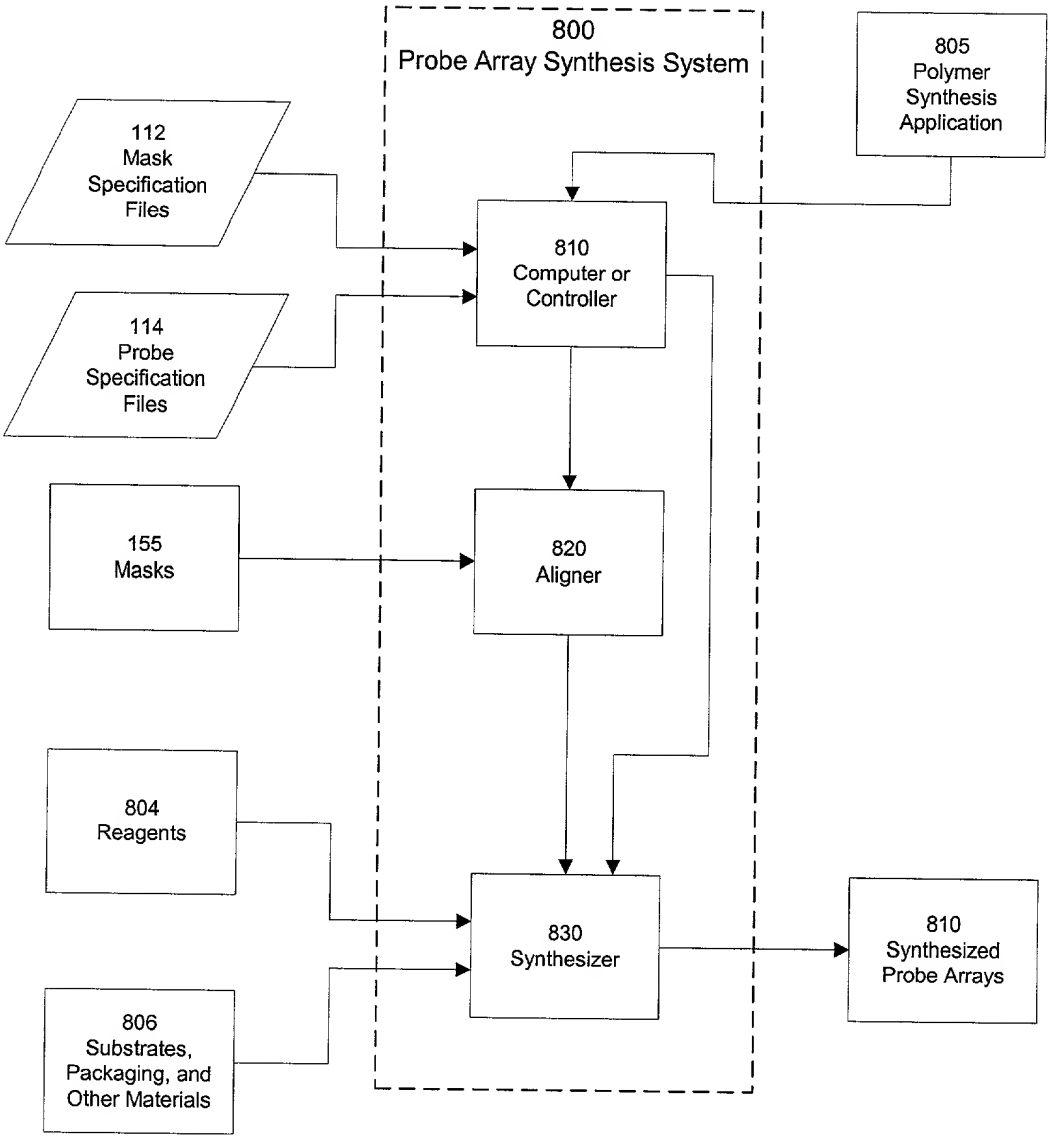

700
Start
702
Determine a group of non-contiguous synthesis areas on a substrate, each separated from each of its nearest neighbors by a Discard Area
704
Select an initial group of reticles on a selected mask
705
Align each of the selected group of reticles on the selected mask with one of the determined group of synthesis areas
710
Couple monomers onto the synthesis areas at locations determined by the aligned reticles
720
Last Group of Reticles?
722
Select next group of reticles
Yes
730
Last Mask?
No
732
Select next mask
Yes
740
Dice substrate including within the Discard areas
799
End

FIGURE 8


800
Probe Array Synthesis System
805
Polymer
Synthesis
Application
112
Mask
Specification
Files
114
Probe
Specification
Files
810
Computer or
Controller
155
Masks
820
Aligner
804
Reagents
830
Synthesizer
810
Synthesized
Probe Arrays
806
Substrates,
Packaging, and
Other Materials